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Batik Fractal Community: Creative Engagement through Technology

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Abstract

Batik Fractal Community in Dago Pojok Area Bandung is a program designed by Piksel Indonesia Company to bring public engagement through the implementation of technology. The aim of this program is to engage lower economic society in creative activities that utilize advanced technology. The Goals for Batik Fractal Community program are to create public engagement, improving creative skill among citizen lived in densely populated poor area like Dago Pojok Bandung, creating economy benefit through establishment of Batik Fractal Cooperative which core business are creating batik design together, selling batik products, Batik making and software training. JBatik Software is not only tool that changes how people are creating batik pattern from manual to digital, but also increasing younger generation participation into creating batik. In a way, technology has successfully bridging younger, and an older generation together in a creative activity that also productive and bring economy benefits for them.

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1. Introduction

Bandung, the capital city of West Java, is one of the ten largest cities in Indonesia with the economic growth rate that reached 8.62 percent (from 2008-2012), outperformed the national economic growth that is 5.8 percent. As

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many as 33 percents of the revenue come from the service sector, and one-third of it is driven by creative industries. In 2005, the contribution of regional gross domestic product (GDP) of the creative economy sector reached 7.8 percent, equivalent to 20 trillion rupiahs. With the dominant contribution from the city's creative sector, Bandung has been appointed as one of the creative cities in Indonesia in 2013 by UNESCO alongside Solo and Yogyakarta. However, the actors of creative industries are still dominated by society with higher social status; college educated with above average financial income. Creative activities that take place in Bandung often do not significantly involve the residents of the lower economic classes. Their roles are mostly limited as audiences, daily paid workers for art festivals, and the highest engagement is becoming performers (such as dancers and singers).

Since 2008, some efforts have been done by creative workers to increase the participation of the underprivileged citizen to contribute to the creative industries and to engage them in creative movement in Bandung. These efforts pioneered, by Bandung Creative City Forum, one of city's creative community associations, firstly through annual festivals called 'HelarFest'. HelarFest itself has successfully drawn the nation and government attention to creative activities in Bandung. Overtime, creative communities has been developing continuous program and gradually involve common citizen in their creative activities. As one of the creative actors, Pikel Indonesia has participated in developing activities that engage the public, using their innovations that are Batik Fractal and jBatik Software.

Pikel Indonesia conducted training and capacity building program in Kampung Dago Pojok, one of the most populated slum areas in Bandung. As the second most populous city in West Java, Bandung's population density reaches 14,228 people per square kilometer. The under advantage citizen usually live in slums area where small houses are built attached to each other with narrow alley, accessible only by pedestrian or motorcycle. One house usually occupied by 2-4 families. Residents who live in the slums typically are the poor with monthly income of IDR 634,000 per household (Central Bureau of Statistics Bandung 2008). This amount is only enough to meet their daily living, without any savings. In such circumstances, it becomes difficult to participate in communal activities, creative, educative which can improve their quality of life.

This paper is written as an exposition of a program conducted by Pikel Indonesia in Kampung Dago Pojok. Pikel Indonesia and residents of Dago Pojok were working together to build a platform where creativity, innovation of design and technology can be used as tools to overcome challenges faced by residents. It is also an attempt to trigger involvement of skilled community, creativity, and to determine ownership of economic assets and play a role in solving urban problems. The study conducted qualitative research with observations, interview and also developed a scenario that was a batik training program to gather data and findings on how residents of Dago Pojok respond to the program. However, the weakness of this study include the situation where knowledge that produced by this study might not generalized to other people in other settings and the study's results are more easily influenced by researcher's personal biases. Researcher uses qualitative study to obtain the data about human behavior, emotion and personal characteristic that match the goal of the program.

1.1. Profile of Kampung Dago Pojok

Kampung Dago Pojok is located between Jalan Dago (Juanda Road) and Maribaya Park (Juanda Forest), also located between Puncut Hills and Sangiang Hills near Ciumbuleuit region (see Figure 1). Kampung Dago Pojok covers an area of 30 hectares, populated by 557 men and 634 women. From the total population, 164 are head of poor families that make total around 641 people. Residents of Dago Pojok subsist on low income, derived from informal and insecure labor and have poor access to education, employment opportunities and public service (Prasetyo and Martin-Iverson 2013)

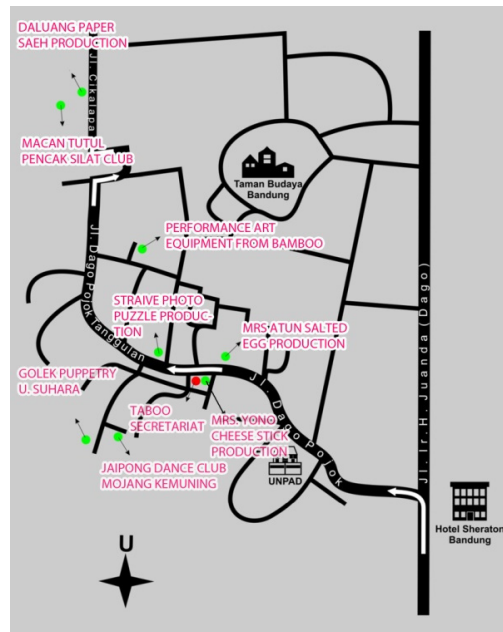


Fig.1. Location of Kampung Dago Pojok. Source: Rumah Taboo, Dago Pojok.

1.2. Creative Village of Dago Pojok

Kampung Kreatif or Creative Village is a concept that was initiated by a couple of social activists and artists, Rahmat Jabaril and Ika Ismurdiahwati in Bandung. They created 'Taboo Community', a community that initiated 'Free School' in 2003 for Kampung Dago Pojok residents. Taboo Community accommodated the dropout teenagers and provided a program of Early Childhood Education (PAUD), Elementary School (SD), up to Junior High School (SMP). Over time, Jabaril saw the potential for creativity among the residents although it is not yet developed formally in entrepreneurial term. In 2011, Jabaril began to mobilize residents to optimize creative activities in this region, began with decorating Dago Pojok area with mural art and hold arts festival featuring a variety of traditional arts of West Java (see Figure 2 and 3). Creative activities of Kampung Dago Pojok have given the opportunities for residents to express themselves and participated in creative and cultural events that attracted visitors. Kampung Dago Pojok became widely known as the Creative Village (*Kampung Kreatif*). The next challenge is how these creative activities can be transformed into a structured and entrepreneurial system that promoting collaboration between Kampung residents with more established creative workers in Bandung to provide sustained benefit particularly in economy and education.



Fig. 2. Art Festival in Dago Pojok. Source: inilahkoran.com, November 2013.



Fig. 3. Mural Art Dago Pojok. Source: apcinstitute.com.

2. Sustainable and Structured Creative Activities

Joi Ito, the director of MIT's famed Media Lab in his keynote speech at Ideas City 2013 in New York, has an idea of solving cities problem : Find what talent already exists in your city, the more iconoclastic, the better, and then nurture it without big-footing it in the process. In other words, "*Find your weirdos, and figure out how to amplify them,*" he says in an article in Fast Company Magazine in 2013. In line with the opinion of Joi Ito, Richard Florida in his book 'The Rise of the Creative Class' explained that a creative city was indicated by the dominant number of actors or creative talent in it. Joi Ito also emphasized that creative initiative should be allowed to appear without any creative engineering, thus encouraging more creative activities to take place in the city and let these activities develop without technical interruption or government intervention. Government is expected only to provide facilities, infrastructures, and access to capital as well as permit to carry out creative activities.

Piksel Indonesia is a creative enterprise and one of the initiators of creative industry based in Bandung. We are the innovator of Batik Fractal, batik whose patterns are designed with our fractal formula. Piksel Indonesia is also creating jBatik Software, the technology that created Batik Fractal patterns. We spread the innovation to artisan communities around the country and aimed to make changes and bring benefits to society. This vision is similar to what Taboo Community of Dago Pojok has in conducting their social work in Kampung Dago Pojok. In February 2013, Ismurdiyahwati reached Piksel Indonesia to give short batik training to residents of Dago Pojok. Short after, Piksel Indonesia and Taboo Community conducted small training class to create a design and traditional batik

making. The training then has encouraged the residents to involve further in batik making activities and ideas started to arise among residents on how they can use their creativity to make batik and sell it.

Piksel Indonesia observed that the behavior changes among the residents can be nurtured further into creative entrepreneurial activities, to which extent Piksel Indonesia as creative enterprise holds the same vision. To accommodate this common vision, Piksel Indonesia, and Taboo Community decided to collaborate in creating sustainable creative activities that involving Dago Pojok residents in daily, continuous, working activities. The program will not be temporary like art festivals and bazaars, but directed to become daily, productive, scheduled creative work. By September 2013, this collaboration has provided batik making training and batik design training using jBatik for the residents. By involving various stakeholders, also implementing and utilizing technology in the program, Piksel Indonesia then builds Batik Fractal Cooperative as the creative platform.

3. Fractal Cooperative as Public Engagement Platform

Creativity on its own does not provide the solution to urban problems. In seeking to encourage new ways of thinking about the city or to explore new concept and organizing principles, the goal is to find interpretative 'key' that improve our understanding of urban dynamics and enable us to act on them (Landry, 2000) . Referring to Landry, Piksel Indonesia as creative enterprise finds that creativity should be explored, standardized, structured, organized and ultimately monetized, so as to be able to contribute a solution to the residents' problem.

Through interview with Jabaril and Ismurdiyahwati in March 2013, also by listening to residents' input, these are some of challenges they are facing: low incomes, low employment, low education, lack of skills, lack of access to capital and market, no access to technology, lack of information, lack of training and no collaboration with other parties. This identification clearly shows that the problems they have are focused on economic and education issues. Piksel Indonesia as creative enterprise observed that these problems can be addressed by establishing a Cooperative as creative, participating, open and fair enterprising platform.

According to International Cooperative Alliance (ICA), there are 7 principles of cooperatives which are: voluntary and open membership, democratic member control, member's autonomy participation, autonomy and independence, education training and information, cooperation among cooperative and concern of community. These principles are used as references in creating the cooperative in Dago Pojok. To form a strong collaboration, Piksel Indonesia and Taboo Community have welcomed Indonesian Batik Cooperative Association (Gabungan Koperasi Batik Indonesia/GKBI) through its sharia finance institution to involve as one of the important stakeholders to provide initial capital to kick start the business. Another important stakeholder is numbers of vocational high school in Bandung, which regularly sends students to do an internship in Batik Fractal Cooperative.



Fig. 4. Batik making activities in Batik Fractal Cooperative Dago Pojok (a) situation 1; (b) situation 2.

Currently in establishing permit, the Cooperative has started batik production which involved in-house designers from Piksel Indonesia to help young member taking roles as batik designers using jBatik while the role of batik-making taken by women members of cooperative. The manufacture of batik based products has done by the interns

of vocational schools collaborating with teenage members. To ensure the business will be running, and all products find a way to the market, Pikel Indonesia as initiator is providing access for the products through its existing market channels. Working process in Batik Fractal Cooperative designed to involve all members in day to day activities where everyone has their rights and obligations at the same level as each member. Batik Fractal Cooperative aimed to address the economy and education issues among Kampung Dago Pojok residents.

As this study found that economy and education issues are the main problem among Kampung Dago Pojok residents that addressed by cooperative establishment, another aspect of bringing together residents into organized and structured activities is automatically increase public participation. To have positive public engagement, Pikel Indonesia as the initiator referring to The 9 Principles of Public Engagement according to PEALS (Policy, Ethics and Life Sciences Research Center) Newcastle University UK which are:

- Participants should join those organizing the process in setting terms of reference for the whole exercise, and framing the questions that they will discuss.
- The group organizing, or in overall control of, the process should be broad-based, including stakeholders with different interests on the subject being discussed.
- There should be a diversity of information sources and perspectives available to participants.
- There should be space for the perspectives of those participants who lack specialist knowledge of the area concerned to engage in a two-way exchange of that possessing specialist knowledge.
- There should be complete transparency of the activities carried out within the process to those both inside and outside it.
- Those without a voice in policy-making should be enabled to use the consultation process as a tool for positive political change. This should be embedded in the process by sufficient funds being made available for follow-up work after their initial conclusions have been reached.
- The process should contain safeguards against decision-makers using a process to legitimize existing assumptions or policies.
- All groups involved in the process should be given the opportunity to identify possible strategies for longer-term learning, development, and change on a range of issues relating to their conclusions.
- The group organizing, or in overall control of, the process should develop an audit trail through the process, to explain whether policies were changed, what was taken into account, what criteria were applied when weighing up the evidence from the process, and therefore how the views of those involved in the participatory process may have made a difference. This should be explored together with as many those involved at all levels of the process as possible.

Through an application of these principles, process of public engagement in Batik Fractal Cooperative is not only addressing the economic issues by increasing their additional income, but also:

- Provide access for the residents to express creativity and preserve Indonesia culture through batik training
- Keep the interaction and collaboration with different parties from outside Kampung Dago Pojok
- Bring confidence and ownership within member of Batik Fractal Cooperative, which give them the role of actors in Bandung creative industries.

4. Creative Engagement through jBatik Implementation

According to DO-IT program of Washington University, being technologically competent can provide an avenue for academic and career success. Computer technology is one of the most powerful tools available to individuals. Technology, including computers, adaptive technology, and the Internet, can help maximize independence, productivity, and participation. It can lead to the highest levels of success—personal, social, academic, and professional. George Couros the Division Principal for Parkland School [5] mentioned, *“Often the saying, ‘technology is just a tool’, is said in the context of schools and learning. I (vaguely) remember writing a similar comment and being challenged regarding that same statement, but since then I have looked at technology in a different way. Based on the definitions I have read, and the way I see technology (in many cases) being used, it has the power to be so much more than a website, device, or app. If a technology transforms the way we do things, is it ‘just a tool’?”*

Discovery of technology has changed the way we do things. Technology is no longer seen as a tool, but further,

technology is also transforming the way we work, communicate, interact and also provide a new way to participate. The way technology is changing our way of doing many things in our lives, as mentioned in DO-IT Program and George Couros above, explained very well the usage of jBatik Software in a batik industry. Firstly, jBatik Software discovery begins with Pikel Indonesia research in 2007 on Indonesian traditional batik patterns and fractal (Lukman, Hariadi, Haldani, 2007). With this software, we can create a variety of batik patterns by changing the parameters and variables fractal mathematical formulas presented with L-System language in a generative way. By using this software, users change their way to design batik pattern from manual to digital. According to users' data of jBatik Software, Pixel Indonesia has noted there are 1000 jBatik users in Indonesia since 2008-2013, where 90 % of users are traditional artisans. Thus, there are 1000 batik artisans that have changed the way they design batik from manual to digital.

The changes in designing the batik from manual to digital bring great impact to batik industry in Indonesia. Pikel Indonesia has observed simultaneously the implementation of jBatik training in various batik regions in Indonesia such as Pekalongan, Cirebon, Yogyakarta and Sidoarjo in the period 2008 to 2013, and it shows that involvement and participation from younger generation in batik artisan families has increased with the use of technology in the process of batik making. Technology application in Batik Fractal Cooperative is also done with jBatik for members to design batik pattern, and it has shown the similar phenomenon within the youngsters in Batik Fractal Cooperative. jBatik training itself attracted teenagers, high school educated young residents with or without access to computers. With this situation, Pikel Indonesia and Taboo Community then provided computers for training by lending laptops to be used by members of training class. Training process is shown in scheme below.

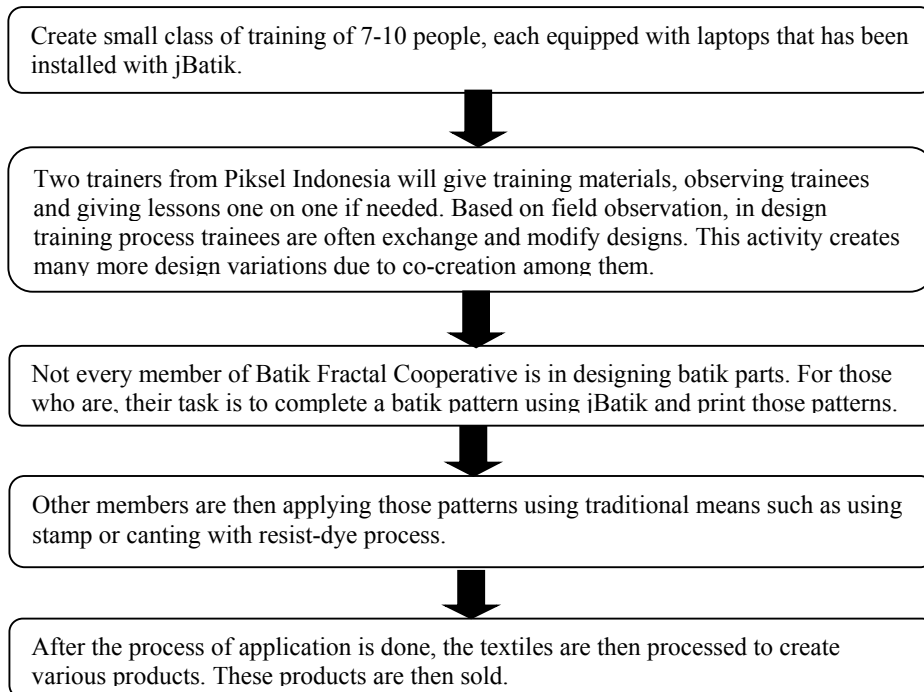


Fig. 5. Working process and technology training in Batik Fractal Cooperative.



Fig. 6. jBatik Software Training for teenagers of Dago Pojok residents (a) Situation 1; (b) Situation 2.

In Batik Fractal Cooperative, not all members learn how to use jBatik Software and become designers. Throughout the working process, each member handles one part according to their interests and talents. Designers who produce designs using jBatik then submit their designs to other members who will apply their work to batik cloth with traditional batik-making process. Once batik fabric is finished, then these fabrics are made into products (see Figure 6).



Fig. 7. Batik-based production in Batik Fractal Cooperative.

5. Conclusion

From the observation of this program, it appears that the technology has improved productivity through the creation of new batik designs and provides an opportunity for residents to express their creativity through design creation using technology. Members that are previously computer illiterate have created more than 20 batik pattern variations using jBatik for each member after training. Also, with the establishment of Batik Fractal Cooperative, members have learned how to manage an organization, build working discipline, develop financial literacy and step by step increasing their productivities that automatically increase their income.

Other findings that Pikel Indonesia found similar in batik artisans' community, jBatik Software has helped shape

public participation among members of Batik Fractal Cooperative in Dago Pojok. It shows young people who are previously uninvolved in the process of making batik now engaged through the process of batik design with technology. It has proved that not only technology has changed our way of creating batik pattern, but also bridging the gap between younger and an older generation in preserving batik tradition. This program has shown that creative engagement through cooperative and technology has given the opportunity for underprivileged citizens to take active participation as actors in creative industries.

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